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Modification P00012

Mission Awareness Capabilities Ramp-up and Optimization (MACRO)

in support of:

United States (U.S.) Department of Defense (DoD)

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C.1 BACKGROUND AND AGENCYMISSION

The mission of the DoD is to fight and win our Nation's wars by providing prompt, sustained dominance across the full range of military operations and spectrum of conflict in support of combatant commanders. To ensure DoD maintains this dominance on the battlefield, the Team Awareness Kit (TAK) was designed in 2010 and developed based on user input and the availability of open source operating systems as a standard Common Operating Picture (COP). TAK is a line of Map-Based, Situational Awareness (SA) Software Applications across multiple platforms, including, but not limited to, Android, iOS, Windows, Linux and HTML, that provides tactical SA capabilities for military and Federal Government operations. This technology has been used and refined in real-world combat zones by special operations forces and warfighters over the past several years and has been adapted to fit broader missions of local, state, and Federal agencies.

Since 2014, various versions of the TAK technologies have been proliferating through DoD and Department of Homeland Security (DHS) forces. Upon realizing that the TAK systems and devices were unable to communicate across organizations, DoD stood up a coordination process that would standardize, control, and distribute TAK with the purpose of promoting common SA and coordination in joint and interagency exercises and operations. As a result, TAK configuration is presently managed as a collaborative program through the Government coordination entity, the TAK Product Center. The TAK Government user agencies have since quadrupled in size, and the TAK has become the predominant COP for tactical users throughout DoD and the Federal Government.

Despite the success of the standardization and rapid proliferation of TAK, development and proliferation are currently hampered as organizations throughout the DoD and Federal Government do not possess a single method to develop and integrate TAK products. As organizations need specific tool sets within TAK, each TAK development has been supported via disparate contracts on an incremental basis. While this facilitated targeted solutions for each agency's mission need, it burdened the TAK Product Center to maintain TAK integrity without adequate systems engineering support. The TAK program requires an all-inclusive contracting method that is centralized and allows for rapid innovation, development, and integration as new technologies and requirements emerge. Thus, it is determined that single Enterprise TAK (ETAK) support via the MACRO TO is warranted on behalf of the Government TAK operators in order to rapidly develop ETAK to suit emergent requirements, while efficiently and effectively managing the enterprise program.

C.1.1 PURPOSE

The purpose of this TO is to integrate SA technologies and capabilities throughout the DoD and Federal agencies to more efficiently perform their mission critical duties, which will not only allow for efficiencies across the ETAK, but will also ensure that all ETAK technologies are interoperable, innovative solutions are shared across the ETAK, and a common framework is executed to solve the technical and management challenges of ETAK.

C.2 OBJECTIVE

The overall objective of this TO is to provide agile, innovative, and cost-effective services to meet the demands associated with the ETAK and ETAK SA technologies. The TO shall provide

enterprise solutions to enhance ETAK technologies and capabilities, ensure ETAK technologies are interoperable, share innovative solutions across the ETAK, and execute a common framework to solve the technical and management challenges of ETAK.

The high-level objectives of this TO are as follows:

a. Provide support services to solve the technical and management challenges of ETAK and enable robust collaboration and interoperability through a variety of communications networks between personnel, vehicles, peripheral devices, and other mission critical systems across the Government.
b. Provide new capabilities and solutions for existing and future operational end-user mission requirements.
c. Provide rapid capability with global reach to concurrently support and manage multiple diverse efforts in various Continental United States (CONUS) and OCONUS locations.

C.3 SCOPE

The scope of the TO is to acquire comprehensive, systems engineering services to develop, assess, enhance, and integrate related software and hardware technologies for the ETAK. The MACRO TO will support advancement and sustainment of future functionality and capabilities of the ETAK to expand across DoD and the Federal Government. This will be achieved through providing products and services, including Program Management; Analytical and Execution Planning (AEP) Services; Engineering, Development, Integration, and Sustainment (EDIS) Services; Assessment, Experimentation, and Demonstration (AED) Services; and Training Support in various CONUS and OCONUS locations at Government and contractor facilities. The ETAK stakeholders include, but are not limited to, DoD, DHS, and Department of Justice (DoJ).

Purchasing weapons systems is not within scope of this TO. Using weapons systems, other than as it relates to the analytical and technical support described in Section C, is not within scope of this TO.

C.4 CURRENT OPERATING ENVIRONMENT

The TAK currently supports, integrates, and sustains a variety of SA technologies, including manned and unmanned platforms, sensor networks, communications networks, intelligence systems, and various displays in the integrated U.S. warfighting environment as well as plug-ins from the Federal Government. The TAK supports both military and non-military missions and is used based on tactical information feeds, various analytics, and visualizations. With multiple operating platforms (i.e., Android, iOS, Windows, Linux, and HTML) and applicability to various mission uses, the user base of the TAK expands into the thousands. As technology advances and new threats emerge, TAK capabilities need to enhance to keep pace with these changes. The DoD is currently focused on maintaining and enhancing the existing capabilities of the TAK, and expanding upon individual SA technologies and capabilities.

The MACRO TO will expand and integrate these individual SA technologies and capabilities (i.e., the Individual TAK (ITAK), Counter Unmanned Aircraft Systems (CUAS), Nett Warrior Program, Integrated Visual Augmentation System (IVAS), Delta-I (military heads-up display development)) with the ETAK to enable the end users. The existing disparate command structures will be addressed and improved through coordinated distribution and sharing of information and systems through the MACRO TO.

C.5 TASKS

The following tasks are in support of this TO and are detailed below.

a. Task 1 – Program Management Support
b. Task 2 – Analytical and Execution Planning (AEP) Services
c. Task 3 – Engineering, Development, Integration, Sustainment (EDIS) Services
d. Task 4 – Assessment, Experimentation, and Demonstration (AED) Services
e. Task 5 – Training Support

C.5.1 TASK 1 – PROGRAM MANAGEMENT SUPPORT

The contractor shall provide program management support under this TO. This includes the management and oversight of all activities performed by contractor personnel, including subcontractors, to satisfy the requirements identified in this Performance Work Statements (PWS). The contractor shall facilitate Government and contractor communications; use industry best-standards and proven methodologies to track and document TO requirements and activities to allow for continuous monitoring and evaluation by the Government; and, ensure all support and requirements performed are accomplished in accordance with the TO. The contractor shall notify the FEDSIM COR and DoD Technical Point of Contact (TPOC) via a Problem Notification Report (PNR) (**Section J, Attachment D**) of any technical, financial, personnel, or general managerial problems encountered throughout the TO PoP.

The contractor's TO governance structure shall be scalable to effectively support a multi-tenant environment, which is defined as multiple Government entities with the need to separately track project management and contract elements such as requirements, deliverables, costs, and ceiling value. The contractor shall use a Work Breakdown Structure (WBS), a component of the Project Management Plan (PMP), during the performance of the task. During the life of the TO, the Government will require varying levels of support on behalf of the organizations listed in Section C.

C.5.1.1 SUBTASK 1 – CONTRACTOR MANPOWER REPORTING

The contractor shall report all contractor labor hours (including subcontractor labor hours) required for execution of services provided under this TO for the U.S. Army in the Enterprise Contractor Manpower Reporting Application (ECMRA) (**Section F, Deliverable 01)**. The contractor shall completely fill in all required data fields using the following web address: https://www.ecmra.mil/Default.aspx. Contractors may use Extensible Markup Language (XML) data transfer to the database server or fill in the fields on the website. While inputs may be reported any time during the Fiscal Year (FY), all data shall be reported no later than October 31 of each calendar year, beginning with 2018. https://armycmra.dmdc.osd.mil/.

C.5.1.2 SUBTASK 2 – COORDINATE A PROGRAM KICK-OFF MEETING WITH THE GOVERNMENT

The contractor shall coordinate a Program Kick-Off Meeting (Section F, Deliverable 02) in conjunction with the Government at a location approved by the Government. The meeting shall provide an introduction between the contractor personnel and Government personnel who shall be involved with the TO. The meeting will provide the opportunity to discuss technical,

management, and security issues, and travel authorization and reporting procedures. At a minimum, the attendees shall include the contractor's Key Personnel, the DoD TPOC, the FEDSIM COR, the FEDSIM CO, and all other Government stakeholders. At least three workdays prior to the Program Kick-Off Meeting, the contractor shall provide a draft Program Kick-Off Meeting Agenda (Section F, Deliverable 03) for review and approval by the FEDSIM CO, the FEDSIM COR, and the DoD TPOC prior to finalizing. The agenda shall include, at a minimum, the following topics/deliverables:

a. Points of contact (POCs) for all parties
b. Draft Program Management Plan (PMP) discussion including schedule, tasks, etc.
c. Draft Financial Reporting Format for Weekly Activity Reports.
d. Personnel discussion (i.e., roles and responsibilities and lines of communication between contractor and Government).
e. Project Staffing Plan and status.
f. TO Portal strategy/solution.
g. Status of Theater Business Clearance (TBC), Letters of Authorization (LOA), and Government-Furnished Life Support Validation (GFLSV).
h. Security discussion and requirements (i.e., building access, badges, Common Access Cards (CACs)).
i. TO administration and invoicing considerations (i.e., TDL process).
j. Transition activities and status.
k. TO and Special Requirements.

The deliverables required to be provided to the Government at the Program Kick-Off Meeting are listed in **Section F**.

The Government will provide the contractor with the number of Government participants for the Kick-Off Meeting, and the contractor shall provide sufficient copies of the presentation for all present. The contractor shall draft and provide a Kick-Off Meeting Minutes Report (**Section F, Deliverable 04**) documenting the Kick-Off Meeting discussion and capturing any action items.

C.5.1.3 SUBTASK 3 – PREPARE A PROGRAM MANAGEMENT PLAN (PMP)

The contractor shall prepare and deliver a draft and a final PMP that is based on the contractor's solution. The contractor shall utilize the PMP as the foundation for information and resource management planning. At a minimum, the PMP shall:

a. Describe the proposed management approach and contractor organizational structure.
b. Describe in detail the contractor's approach to risk management under this TO and approach to communications including processes, procedures, and other rules of engagement between the contractor and the Government.
c. Describe in detail the contractor's quality control methodology for accomplishing TO performance expectations and objectives. This includes how the contractor's processes and procedures will be tailored and integrated with the Government's requirements to ensure high-quality performance.
d. Contain detailed Standard Operating Procedures (SOPs) for all tasks.
e. Describe management process for TDLs.

f. Include a staffing matrix (including all subcontractor personnel) assigned to the TO and include, at a minimum, their position, client(s) supported, and duty station/assigned place of performance.
g. Include the contractor's general operating procedures for:
    1. Travel
    2. Work hours
    3. Leave
    4. Staff training policies
    5. Problem or issue resolution

The contractor shall provide the Government with a draft PMP (**Section F, Deliverable 05)** on which the Government will make comments. The final PMP (**Section F, Deliverable 05**) shall incorporate the Government's comments. The PMP shall be updated as changes in the program occur (**Section F, Deliverable 05**). The PMP shall be reviewed and updated as needed on a bi-annual basis, at a minimum, and the contractor shall conform to the latest Government-approved version of the PMP. The contractor shall keep the PMP electronically accessible to the Government at all times.

C.5.1.4 SUBTASK 4 – PREPARE A MONTHLY STATUS REPORT (MSR)

The contractor shall develop and provide an MSR using Microsoft (MS) Office Suite applications, via electronic mail (email) to the FEDSIM COR and the DoD TPOC (**Section F, Deliverable 06**) in accordance with **Section J, Attachment F**. The MSR shall summarize by TDL the technical and managerial work performed by the contractor during the previous month, and shall also, at a minimum, include the following:

a. Problems and corrective actions taken. Also include issues or concerns and proposed resolutions to address them.
b. Personnel gains, losses, and status (upcoming leave, security clearances, etc.)
c. Government actions required
d. Schedule (show major tasks, milestones, and deliverables; planned and actual start and completion dates for each)
e. Summary of trips taken, conferences attended, etc. (attach Trip Reports (**Section J, Attachment G**) to the MSR for reporting period)
f. Financial status including:
    1. Actual TO burn through the previous month and projected cost of each CLIN and approved TDL, by task area, for the current month
    2. Up-to-date spend plan including baseline, actuals, and forecast
    3. Cumulative invoiced amounts for each CLIN and TDL to-date
    4. ODCs CLIN tracking report showing pending commercial purchases, approved commercial purchases, costs, locations, and due dates
g. Any recommendations for change, modifications, or improvements in tasks or process
h. Any changes to the PMP
i. Site Status Report including monthly pros and cons of issues impacting site personnel, performance, etc.

j. Contractor work initiatives, cost-reductions, efficiencies, savings, and good news stories. Present significant events, accomplishments, new undertakings, efficiencies, design, and process improvements undertaken during the reporting period. Include follow-up reports on prior initiatives and good news stories
k. Monthly performance to TDL Metrics by each TDL task
l. Government-Furnished Property (GFP) Inventory report

C.5.1.5 SUBTASK 5 – CONVENE QUARTERLY IN-PROCESS REVIEWS (IPRs)

The contractor PM shall convene a quarterly IPR meeting with, at a minimum, the DoD TPOC, FEDSIM COR, and other vital Government stakeholders **(Section F, Deliverable 07**). The purpose of this meeting is to ensure that the Government has all the required information to make decisions, manage stakeholders, and coordinate activities. The contractor shall provide minutes of these meetings, including attendance, issues discussed, decisions made, and action items assigned, to the DoD TPOC and the FEDSIM COR (**Section F, Deliverable 08**).

C.5.1.6 SUBTASK 6 – WEEKLY ACTIVITY REPORTS

The contractor shall prepare a Weekly Activity Report (**Section F, Deliverable 09**) for the Government's selected TDLs to include at minimum, the following information:

Summary: A brief statement of the overall TDL task status, modifications to TDLs, and any changes to the TDL since the last report.

The report shall include all contractor employees on the TO (employees of the Prime, all subcontractors, and all vendors) who charge labor to the TO, at all locations, worldwide.

The report shall be broken out by TDL, to account for different length standard work week; the as-of-date is the final day of each contractor pay period.

C.5.1.7 SUBTASK 7 – TRIP REPORTS AND DEPLOYMENT COORDINATION

The contractor shall document all long-distance travel in a Trip report (**Section J, Attachment G**) (**Section F, Deliverable 10**) including the name of the employee, Government approval authority, location of travel, duration of trip, total cost of the trip, and POCs at the travel location. Trip reports shall also contain, at a minimum, a detailed description of the purpose of the trip and any knowledge gained.

The contractor shall be responsible for understanding and fully complying with DoD, Army, and Theater directives for all deployed personnel. The contractor shall coordinate all activities with the local Combatant Commander to ensure all contractor deployments are executed on schedule and in accordance with all required directives. This support shall include direct assistance with all actions required to deploy contractor personnel to deployable operational areas. The contractor shall stay abreast of all deployment requirements. The contractor shall coordinate and complete all related activities for the contractor personnel deployment to OCONUS locations, such as working in the Synchronized Pre-Deployment and Operational Tracker (SPOT) System and the Aircraft and Personnel Automated Clearance System (APACS) as well as creating LOAs.

C.5.1.8 SUBTASK 8 – PERSONNEL TRACKING AND REPORTING

The contractor shall track all personnel supporting the TO via the Personnel Status Report (PERSTAT) (**Section F, Deliverable 11**). The Government will specify the information to be included in the PERSTAT post-award at the Program Kick-Off Meeting.

For the PERSTAT, the contractor shall assist the DoD TPOC in maintaining the Government's PERSTAT and other management tools for tracking the contractor's availability against specific mission requirements. For personnel supporting U.S. Armed Forces, the contractor shall track and report on all applicable contractor personnel in the Central Command Area of Responsibility (AOR) via the PERSTAT as soon as those individuals have been scheduled to attend CONUS Replacement Center (CRC) for OCONUS deployment location.

C.5.1.9 SUBTASK 9 – TECHNICAL DIRECTION LETTER(S) AND TECHNICAL DIRECTION PLAN(S)

The contractor's TO governance structure shall be scalable to effectively support a multi-tenant environment, which is defined as multiple Government entities with the need to separately track project management and contract elements such as requirements, deliverables, costs, and ceiling value. The contractor shall use a WBS, a component of the PMP, during the performance of Task 1. During the life of the TO, the Government will require varying levels of support on behalf of the DoD and Federal Agencies. The Government anticipates that this will be a project-based TO with multiple projects concurrently operating across DoD and Federal Agencies. TDLs will be initiated at varying times within a PoP, consisting of various appropriation types (e.g., one-year, two-year, or no-year), depending on the bona fide need. These efforts may be severable or non-severable. The FEDSIM COR will communicate all requests for project support to the contractor. For each FEDSIM COR identified project, the Government will provide an initial draft TDL to the contractor and the contractor shall draft its Technical Direction Plan (**Section F, Deliverable 12**) for the Government review and approval in an editable, unlocked Word document and provide project management services. At a minimum, each updated draft Technical Direction Plan (TDP) shall include the following information:

a. Summary of the Government's requirement(s) which includes, at a minimum, the project specifications, structure, activities, conditions, risks, mitigations, and schedule from project inception through project closeout. All project milestones shall be detailed with clear, unambiguous target dates.
b. TDL Number and date
c. Project staffing and resource profile by task
d. Travel and security considerations
e. Communication and roles and responsibilities framework to ensure both the contractor and the Government are able to efficiently and effectively monitor progress and receive early warning of potential issues
f. Government's determination and contractor's validation if the work is being performed under another contract. If yes, then the POC contact information and contract number must be provided.
g. Detailed project cost estimate separated by CLIN and task. These cost estimates may not be exceeded without another CO-approved TDL

h. TDL Transition-In and Transition-Out procedures

Once the draft TDP has been initially approved by the FEDSIM COR and FEDSIM CO, the contractor shall schedule and coordinate a TDP Project Kick-Off Meeting (**Section F, Deliverable 13**) at a location approved by the Government. TDP Project Kick-Off Meetings may be held virtually pending approval from the FEDSIM COR. The meeting will provide an introduction between the contractor personnel and Government personnel who will be involved with the project. The meeting will provide the Government and the contractor with an opportunity to discuss technical, management, and security issues as well as other TDL processes and procedures. At a minimum, the attendees shall include the contractor PM, relevant Government representatives, the DoD TPOC, and the FEDSIM COR. Prior to the TDP Project Kick-Off Meeting, the contractor shall provide a TDP Project Kick-Off Meeting Agenda (**Section F, Deliverable 14**) for review and approval by the FEDSIM COR and the DoD TPOC prior to finalizing. The TDP Project Kick-Off Meeting Agenda shall include, at a minimum, the following topics:

a. Introduction of team members and personnel including roles, responsibilities, and lines of communication between the contractor and the Government.
b. TDL review.
c. Cost estimate discussion.
d. Staffing discussion and status.

The contractor shall draft and provide TDP Project Kick-Off Meeting Minutes (**Section F, Deliverable 15**), documenting the TDP Project Kick-Off Meeting discussion and capturing any action items.

Following the TDP Project Kick-Off Meeting, the contractor shall provide the Final TDP (**Section F, Deliverable 16**) to the FEDSIM COR and FEDSIM CO for review and approval in accordance with Section E. The Final TDP shall be delivered in an editable, unlocked Word document. The TDP is an evolutionary document that shall be updated each Option Period at a minimum or as changes occur. The contractor shall work from the latest Government-approved version of the TDP.

C.5.1.10 SUBTASK 10 – DEVELOP AND MAINTAIN A TO PORTAL

The contractor shall develop and maintain a TO portal that both Government-approved contractor personnel and Government personnel can access worldwide via unique user ID and password. The TO portal shall not be CAC enabled and shall be a cloud-based solution available to users with a .mil and a .gov account. The contractor shall provide the DoD TPOC and the FEDSIM COR with a recommended portal strategy or solution (**Section F, Deliverable 17**) at the Program Kick-Off Meeting; once the FEDSIM COR has provided the contractor with authority to proceed, the contractor shall proceed with developing and implementing the approved solution in a timely and efficient manner.

The objective of the TO portal is to introduce efficiencies and ensure coordinated service delivery worldwide. At a minimum, the TO portal shall serve as a repository for all TDLs and TO deliverables, and it shall also possess a workflow process that automates the contractor's submission of Rough Order of Magnitudes (ROMs), Requests to Initiate Purchases (RIPs), and Travel Authorization Requests (TARs). This workflow process shall also allow the FEDSIM COR, TPOC and other Government personnel to provide digital concurrence and approval for ROMs, RIPs, and TARs.

At a minimum, the portal shall provide the following:

a. Secure logical access controls with role-based views (e.g. COR, TPOC, tenant).
b. A dashboard that identifies each TDL being supported and includes the following:
    1. TDL ID
    2. Client Name
    3. TDL Name
    4. Abbreviated work description
    5. Customer POC information
    6. Contractor POC information
    7. TDL start date
    8. TDL end date
    9. Allocated budget by CLIN
    10. Funded amount by CLIN
    11. Incurred cost amount by CLIN
    12. Invoiced amount by CLIN
    13. Burn Rate by CLIN
c. An automated workflow for Government review/approval of RIPs and TARs, inclusive of the DoD TPOC and FEDSIM COR.
d. The ability to view financial information to allow the Government to track each effort's financial health. The Government will establish the level of granularity needed at the onset of an effort (e.g., TDL, funding document, or line of accounting level).
e. An organized document library to store management related deliverables (e.g., MSRs, PMP, etc.).

The portal shall be operational within 30 workdays of receipt of the Government's approval on the portal strategy or solution (**Section F, Deliverable 18**). The portal capabilities are expected to evolve and adapt to meet the mission needs of the Government.

C.5.1.11 SUBTASK 11 - TRANSITION-IN

The contractor shall implement its Transition-In Plan no later than 15 workdays after award. During the Transition-In, the contractor shall ensure that there will be minimum service disruption to vital Government business and no service degradation during and after transition. All transition activities shall be completed 60 calendar days after Project Start (PS). The contractor shall provide a Transition-In Plan **(Section F, Deliverable 19)** at the Program Kick-Off Meeting based on the contractor's proposed plan.

As a part of transition-in, the contractor shall also coordinate with the outgoing contractors and the Government to ensure all Government property is transferred to the incoming contractor. The contractor shall provide an updated Transition-In Plan (**Section F, Deliverable 19**), based on the Transition-In Plan submitted with its proposal, to be approved by the Government.

C.5.1.12 SUBTASK 12 - TRANSITION-OUT

The Transition-Out Plan shall facilitate the 90-day accomplishment of a seamless transition from the incumbent to an incoming contractor/Government personnel at the expiration of the TO. The

contractor shall provide a draft Transition-Out Plan **(Section F, Deliverable 20)** no later than 120 calendar days prior to expiration of the TO Base Period. The final Transition-Out Plan (**Section F, Deliverable 21**) shall incorporate the Government's comments. The contractor shall review and update the Government-approved Transition-Out Plan on an annual basis, at a minimum, and the contractor shall review and update the Transition-Out Plan quarterly during the final Option Period (**Section F, Deliverable 21**). The contractor shall identify how it will coordinate with the incoming contractor and/or Government personnel to transfer knowledge regarding the following:

a. Project management processes
b. Points of contact (POCs)
c. Location of technical and project management documentation
d. Status of ongoing technical initiatives
e. Appropriate contractor-to-contractor coordination to ensure a seamless transition
f. Transition of Key Personnel roles and responsibilities
g. Schedules and milestones
h. Actions required of the Government

The contractor shall also establish and maintain effective communication with the incoming contractor/Government personnel for the period of the transition via weekly status meetings.

C.5.2 TASK 2 – ANALYTICAL AND EXECUTION PLANNING (AEP) SERVICES

The contractor shall provide AEP expertise for the Government to identify and review new capabilities and counter emerging threats. The contractor shall conduct analysis; devise and recommend potential solutions for the Government's review; conduct Cost Benefit Analysis; and schedules for prototyping, integration, demonstration, and assessment to upgrade, enhance, or develop ETAK technologies and capabilities. The contractor shall provide other AEP support for existing and future ETAK capabilities.

C.5.2.1 SUBTASK 1 – ANALYTICAL SERVICES

The contractor shall conduct research, threat analysis, and feasibility studies to provide recommendations for potential technology and capability solutions. The contractor shall document findings and results in the Analysis Report (**Section F, Deliverable 22**) upon completing the activities that include the following:

a. Analyze current Tactics, Techniques, and Procedures (TTPs) employed by U.S. warfighters and OGA personnel as they relate to ETAK.
b. Analyze ETAK product performance, operational capabilities, effectiveness, and associated enterprise support needs, identifying opportunities to upgrade or modify related systems or products to enhance operational support and capabilities.
c. Conduct market analysis and assess potential applications of emerging technologies to alleviate noted deficiencies or weaknesses, enhance performance of existing ETAK products, or provide the needed functionality required in response to new and emerging operational missions and threats. The contractor shall support activities including the following:
    1. Provide support, including development of systematic situation analyses, trade-off

analyses, problem analyses, decision analyses, risk analyses, tactics analyses, mission analyses, and strategy analyses associated with systems engineering and integration.

2. Provide human systems integration analysis and assess design solutions for ETAK systems.
3. Conduct research and analysis in support of the development of IT-based ETAK systems, subsystems, associated equipment, and programs.
4. Assist the Government with the effectiveness evaluation of Commercial-Off-The-Shelf (COTS), Government-Off-The-Shelf (GOTS), and other developmental hardware and software in the industry.
5. Identify, exploit, and manipulate existing and emerging technologies.

d. Conduct data analysis and provide technical recommendations for the enhancement of strategic concept development.
e. Analyze operational support requirements to identify the insertion of technical updates to improve reliability and maintainability, lower costs, and/or add performance enhancements.
f. Analyze strategic support requirements and identify areas where ETAK, in its existing or enhanced form, can offer improved services.
g. Take high-impact initiatives to identify and incorporate new or evolving SA technologies from OGAs or the industry; craft strategies for the Government's review; and facilitate internal and external communication and outreach efforts.
h. Attend conferences and meetings with Government personnel to discuss and exchange technical, engineering, and programmatic information related to ETAK products. Provide meeting/conference minutes and proposed responses to action items (**Section F, Deliverable 23**).

C.5.2.2 SUBTASK 2 – EXECUTION PLANNING SERVICES

The contractor shall develop and recommend technology enhancement solutions of existing ETAK capabilities needed for air, ground, and maritime requirements for the Government's review and consideration in the Execution Plan (**Section F, Deliverable 24**). The contractor shall focus on developing an approach that accommodates the wide variety of ETAK missions and uses in response to ETAK user agencies' identified and emerging requirements while providing operational security, threat exploitation protection, and robust user interface as well as maintaining open systems architecture. The contractor shall develop an innovative and feasible approach and recommend enhancement solutions that can incrementally incorporate capabilities as new requirements emerge. The contractor shall employ system engineering, software and hardware engineering, system integration, experimentation and vulnerability assessments, and human systems integration in all developmental efforts. The contractor's Execution Plan shall:

a. Allow the Government to assess various courses of action including prototyping, integration, demonstration, and assessment for the recommended solution.
b. Include ETAK technologies Concept of Operations (CONOPS), which shall address specific requirements, specifications, GFP, Contractor-Furnished Equipment (CFE), COTS and GOTS software, and locally fabricated integration components. The contractor shall provide an analysis of all CONOPS and recommendations of the most viable

concepts.

c. Include Cost Benefit Analysis as well as schedule data for prototyping, integration, demonstration, and assessment to upgrade, enhance, or develop ETAK technologies and capabilities.
d. For the Government's approved CONOPS, the contractor shall demonstrate and evaluate the technologies proposed and provide expert level analysis and assessment of ETAK command and control systems and other emerging technical efforts. The contractor shall develop SOPs and processes associated with system operations and mission areas leveraging knowledge management and best practices. The contractor shall develop technical performance and evaluation plans to support rapid insertion of the capabilities into an operational environment.
e. Identify documentation requirements and risks specifically related to intellectual property rights for ETAK engineering and development tasks or projects as well as mitigation strategies that can be employed through various courses of action. The contractor shall identify optimal formats and contents of these findings and recommendations in the Execution Plan and request the Government's approval in advance.

C.5.3 TASK 3 – ENGINEERING, DEVELOPMENT, INTEGRATION, AND SUSTAINMENT (EDIS) SERVICES

The contractor shall provide EDIS services for the Government's approved ETAK solutions upon review of the Analysis Report, Execution Plan, and other sources of input and consideration.

C.5.3.1 SUBTASK 1 - ENGINEERING SERVICES

The contractor shall provide engineering support associated with ETAK technologies and capabilities. Engineering support shall be provided in the following engineering domains including software, electrical, mechanical, biomedical, chemical, geospatial, environmental, nuclear, avionics, aerospace, network, Information Assurance (IA), and architectural engineering as required to support technologies and capabilities that are and will be integrated with ETAK. The contractor shall support activities that include the following:

a. Conducting technical and systems engineering activities to prepare engineering packages including drawings and related artifacts to support production of the approved solution. The contractor shall recommend the specific composition of the engineering drawing package based on scope and complexity of the solution and the specific needs of the tenant agency. The contractor shall communicate and collaborate with the DoD TPOC and other Government representatives throughout this process; prepare for and participate in discussions, technical interchange meetings, configuration control boards, and other forums at various stages to review progress; and participate in a comprehensive review of the completed package.
b. Developing and executing Configuration Management (CM) Plans (**Section F, Deliverable 25**) for all configuration items. The collection and dissemination systems process will be managed under the total CM process throughout the life of the system. The contractor shall prepare and/or evaluate Engineering Change Proposals (ECPs) to ensure proper deployment of changes.

c. Developing detailed designs of ETAK systems and subsystems in Systems Design Documents (**Section F, Deliverable 26**) in coordination with the Government. The designs shall include unique systems, subsystems, and components associated with ETAK including COP; SA; Intelligence, Surveillance, Reconnaissance, Reconnaissance (ISR); Force Protection (including Counter Unmanned Aerial Systems); system integration (all mobility platforms); Electronic Warfare (EW); space and terrestrial communications; and related sensors and networks.
d. Producing Technical Data Package (TDP) reviews including drawing package audits, associated reports, technical summaries, technical service bulletins, and other open actions such as the Commercial Item Evaluation (**Section F, Deliverable 27**).
e. Reviewing drawing packages, performing configuration audits, and preparing the Configuration Audit Reports (**Section F, Deliverable 28**).

C.5.3.2 SUBTASK 2 - DEVELOPMENT SERVICES

The contractor shall configure and tailor existing software and hardware and develop new or modified software and hardware to meet the needs of new or modified ETAK technologies. The configuration and programming activities will be determined by the specific software/hardware solutions and the required functionality. The contractor shall identify and document the detailed functional and performance requirements and the system, subsystem, and module specifications as applicable. This may include data inputs and sources, user interface formats or display layouts, processing requirements, data flow and storage requirements, data outputs and destinations, network architecture requirements and components, proposed programming language(s), and network and information security. The contractor shall support activities that include:

a. Software Development
    1. Apply an agile approach to software development.
    2. Develop software products and associated interfaces using commercially accepted practices, and in accordance with the configuration standards defined in the Security Technical Implementation Guides (STIGs) located at https://public.cyber.mil/stigs/.
    3. The Government's releasable deliverables shall include all certifications and attributes necessary for installation on Government computers and networks. These may include:
        i. Code verification.
        ii. Verification of compliance with industry and Government standards.
        iii. Developmental testing.
        iv. Code rework.
        v. Release for operational testing by customer.
        vi. Code finalization and release.
    4. The contractor shall deliver Software Documentation Packages (**Section F, Deliverable 29**) in conjunction with executable capability packages. Documentation packages shall include, for each software application/plug-in, the following in accordance with the instructions in **Section J, Attachment E**:
        i. Software Development Plan (SDP)

ii. Software Requirements Specification (SRS)
iii. Software Design Description (SDD)
iv. Software Test Plan (STP)
v. Software Test Description (STD)
vi. Software Test Report (STR)
vii. Software User's Manual (SUM)
viii. Software Security Compliance Report
ix. Installable Application and Execution Code
x. Source Code and Data Files

5. Sustain software by updating, integrating, testing, and delivering software corrections to ensure legacy capabilities are not degraded.

b. Hardware Development
   1. Prototype hardware using detailed designs, and evaluate performance and ETAK functionality per the approved Systems Design Document.
   2. Update and deliver technical documentation (**Section F, Deliverable 30**) that reflects the updated system/equipment configuration. This technical documentation may include updating engineering drawings, provisioning documentation, software documentation, source code, and technical instructions by the Government.

C.5.3.3 SUBTASK 3 - INTEGRATION SERVICES

The contractor shall integrate new or modified systems, subsystems, and components into the ETAK architecture to increase mission effectiveness and improve performance. Integration support includes the integration of subsystems and sensors with models, software, hardware, firmware, COTS and GOTS items, integrated systems, and subsystems. The contractor shall provide an Integration Plan (**Section F, Deliverable 31**) and perform integration and installation of a new or modified ETAK system and transition to the new ETAK system per the approved Integration Plan. The contractor shall include in the Integration Plan and execute activities in its pre-planned sequencing, including roles and responsibilities, required resources, and associated schedules in accordance with new, upgraded, or modified ETAK systems. The contractor shall specify and leverage the engineering drawing package, project and integration schedules, and constraints imposed by ongoing operations.

C.5.3.4 SUBTASK 4 - SUSTAINMENT SERVICES

The contractor shall provide maintenance support and information security throughout all phases of the System Development Life Cycle (SDLC) to sustain existing and newly developed ETAK functionality and interoperability.

a. Maintenance: The contractor shall maintain ETAK systems and equipment including infrastructure systems, software, hardware, and other related capabilities, as required by the Government. The contractor shall manage warranty and maintenance agreements for all equipment and software that require warranty and maintenance contracts. To mitigate service disruptions, all equipment shall remain covered by maintenance agreements through its deployment. Additionally, the contractor shall provide notification regarding

all future maintenance overage requirements. The contractor shall support activities that could include the following:

1. Modernizing the ETAK infrastructure through the replacement of computer processors and peripheral equipment, updating required operating systems and control and support software, and upgrading interface test adapter and ancillary equipment hardware and software.
2. Supporting sensor storage and providing maintenance and logistics processing for non-deployable systems.

b. IA: The contractor shall support the design, development, and implementation of security countermeasures for all systems that adequately address IA requirements and provide confidentiality, integrity, availability, authentication, and non-repudiation. The contractor shall support activities that include the following:

1. Address IA Vulnerability Alerts (IAVAs) and emerging technical security requirements from DoD and the industry.
2. Develop an IA Plan (**Section F, Deliverable 32**) to implement an architecture to connect multiple security domains via accredited cross-domain solutions to flow information from high-security domains to low-security domains and vice versa.
3. Assess and document in the plan the technical, operational, and programmatic risks that would be incurred; identify the associated pros and cons; and determine the probability of successful implementation.
4. Work with the Government to identify any unique cybersecurity requirements and ensure activities and artifacts are aligned with those requirements.

C.5.4 TASK 4 – ASSESSMENT, EXPERIMENTATION, AND DEMONSTRATION (AED) SERVICES

The contractor shall provide Vulnerability Assessments and Field Experimentation services associated with ETAK throughout all phases of the systems life cycle and Operational Demonstration services as required by the Government. The contractor shall develop and execute an Assessment and Experimentation Plan that will be reviewed for accuracy and completeness and approved by the Government (**Section F, Deliverable 33**). The Assessment and Experimentation Plan (**Section F, Deliverable 33**) shall facilitate the Government's Vulnerability Assessments and Field Experimentation of system performance, adherence to specifications, and overall effectiveness.

The contractor shall provide the AED services associated with ETAK including the following.

a. Vulnerability Assessments: The contractor shall provide Vulnerability Assessment services to the Government on hardware and software of the ETAK systems to protect components from any vulnerability to include, but not limited to, denial, degradation, destruction, manipulation, and information compromise. The contractor shall develop Assessment Status Reports (**Section F, Deliverable 34**) to document the status of software and hardware vulnerabilities of the ETAK systems. The contractor shall support the Government with development and implementation of corrective actions to mitigate or remove noted weaknesses or deficiencies found in the assessment, reviewed and approved by the Government. Vulnerability Assessment shall follow an iterative process:

1. Analyze network architecture.

2. Analyze devices.
3. Conduct penetration testing.
4. Conduct Denial of Service (DoS).
5. Report vulnerabilities.
6. Recommend mitigation measures and support the Government with development and implementation of corrective actions.

b. Field Experimentation: The contractor shall provide Field Experimentation services to the Government on hardware, software, and operational concepts of the ETAK systems. The contractor shall develop Experimentation Status Reports (**Section F, Deliverable 35**) to document the status of experimentation results. The contractor shall develop and implement corrective actions to mitigate or remove noted weaknesses or deficiencies found in the experimentation, reviewed and approved by the Government. The contractor shall assess and evaluate ETAK solutions to ensure interoperability, utility, security, reliability, stability, efficiency, and human factors integration

c. Operational Demonstration: The contractor shall provide ETAK technology and capability demonstration services during an operational experiment, exercise, or evaluation as required by the Government. This support requires rapid response and deployment of Field Service Representatives (FSRs) as well as small scale deployment of ETAK technologies, required within timelines associated with ongoing operations in support of DoD and OGAs in CONUS or OCONUS locations. The expected duration of the task ranges from 60 to 180 calendar days; however, the length of Temporary Duty (TDY) may be longer or shorter depending on the task and mission circumstances and will fluctuate with project requirements.

C.5.5 TASK 5 – TRAINING SUPPORT

The contractor shall provide training on the ETAK-related technologies and capabilities including the following:

a. Develop Training Documentation (**Section F, Deliverable 36**) containing materials and manuals, as well as coordinate and provide training for demonstrations, exercises, operational systems training, and mission training. At a minimum, operational systems training shall address operator and/or maintainer interfaces with the system, including normal and degraded modes of operation in order to ensure users' ability to operate the systems delivered. Also, at a minimum, cyber security training shall address Computer Network Defense (CND), IA, and Certification and Accreditation (C&A) topics.

b. Adapt and continuously improve Training Documentation **(Section F, Deliverable 36)** based on system updates and student feedback. The contractor shall develop master reproducible training materials and training aids to support follow-on training. As part of the training effort, the contractor shall support the Government in the review and/or evaluation of training documentation.

c. Provide operations and maintenance training for ETAK system and technology users at all levels, using all modes of training including classroom, on-the-job and distance learning as needed at the Government and contractor sites worldwide. The contractor shall provide training that covers all system components and required procedures. The contractor shall support Government pre-system deployment validation of all training and training material.